appropriate type is defined and the appropriate number of I/O Devices are created in step **2320**. If an I/O Port exists in the engineering database for the Port address, but the Port Type does not match the type of the sensed I/O Port, the user is notified of the mismatch in step **2322**, and asked whether the engineering database is to be changed to match the sensed I/O Port in step **2324**. The Port Type in the engineering database is changed to the sensed Port Type in step **2326** if requested by the user.

Once the Port Type is known, the auto-configuration program interrogates each I/O Device in accordance with the Port Type in step **2328** to determine the Device Type. If no I/O Device is previously created in the engineering database for that device address, an I/O Device of the appropriate type is defined in step **2330**. If an I/O Device exists in the engineering database for the Device address, but the Device Type does not match the type of the sensed I/O Device, the user is notified of the mismatch in step **2332**, and asked whether the engineering database is to be changed to match the sensed I/O Device in step **2334**. The Device Type in the engineering database is changed to the sensed Device Type in step **2336** if requested by the user.

In step **2338**, instrument signal tags (ISTs) are automatically created for primary signal sources on the I/O Ports and I/O Devices, unless an IST already exists with the identical signal source path.

While the invention has been described with reference to various embodiments, it will be understood that these embodiments are illustrative and that the scope of the invention is not limited to them. Many variations, modifications, additions and improvements of the embodiments described are possible. For example, the control logic for performing operations may be implemented as executable program code at any levels including high level languages, assembler languages, and object codes. The control logic may also be implemented as state machines, electronic logic, and the like.

What is claimed is:

1. A process control system comprising:

a process;

a plurality of devices coupled to the process;

a communication network coupled to the devices;

a workstation coupled to the plurality of devices via the network and including a user interface; and

a software system executable on the network and implementing a routine for automatically sensing a connection of a device to a network and placing the connected device in an accessible state for communicating with a user via the user interface including:

a routine for configuring the connected device in a network control configuration of the plurality of devices, wherein the routine for configuring the connected device further includes:

a user-interactive routine for determining a device type of the connected device;

a user-interactive routine for determining a role of the connected device with respect to the process control system;

a user-interactive routine for assigning a physical device tag the determined role; and

a user-interactive routine for verifying connection of the device to the network.

2. A process control system comprising:

a process;

a plurality of devices coupled to the process;

a communication network coupled to the devices;

a workstation coupled to the plurality of devices via the network and including a user interface; and

a software system executable on the network and implementing a routine for automatically sensing a connection of a device to a network and placing the connected device in an accessible state for communicating with a user via the user interface including:

a routine for configuring the connected device in a network control configuration of the plurality of devices, wherein the routine for configuring the connected device further includes:

a user-interactive routine for initiating calibration of the connected device; and

a user-interactive routine for configuring the device within an overall control scheme of the process control system.

3. A process control system comprising:

a process;

a plurality of devices coupled to the process;

a communication network coupled to the devices;

a workstation coupled to the plurality of devices via the network and including a user interface; and

a software system executable on the network and implementing a routine for automatically sensing a connection of a device to a network and placing the connected device in an accessible state for communicating with a user via the user interface, the software system including:

a routine for commissioning the connected device including:

a user-interactive routine for assigning a physical device tag, a device address, and a device identification to the connected device; and

a user-interactive routine for installing a control strategy to the digital device.

4. A control system comprising:

a network;

a plurality of devices coupled to the network;

a distributed controller coupled to the plurality of devices and controlling the plurality of devices according to a defined control configuration, the distributed controller including:

a control logic for sensing a device that is connected to the network but not included in the defined control configuration;

a control logic for supplying initial interconnect information to the connected device;

a control logic for uploading configuration parameters from the connected device to the distributed controller; and

a control logic for configuring the connected device in the defined control configuration including:

a user-interactive control logic for determining a device type of the connected device;

a user-interactive control logic for determining a role of the connected device with respect to the process control system;

a user-interactive control logic for assigning a physical device tag the determined role; and

a user-interactive control logic for verifying connection of the device to the network.

5. A control system comprising:

a network;

a plurality of devices coupled to the network;

a distributed controller coupled to the plurality of devices and controlling the plurality of devices according to a defined control configuration, the distributed controller including:

a control logic for sensing a device that is connected to the network but not included in the defined control configuration;

a control logic for supplying initial interconnect information to the connected device;

a control logic for uploading configuration parameters from the connected device to the distributed controller; and

a control logic for configuring the connected device in the defined control configuration including:

a user-interactive control logic for initiating calibration of the connected device; and

a user-interactive control logic for configuring the device within an overall control scheme of the process control system.

6. A control system comprising:

a network;

a plurality of devices coupled to the network;

a distributed controller coupled to the plurality of devices and controlling the plurality of devices according to a defined control configuration, the distributed controller including:

a control logic for sensing a device that is connected to the network but not included in the defined control configuration;

a control logic for supplying initial interconnect information to the connected device;

a control logic for uploading configuration parameters from the connected device to the distributed controller; and

a control logic for commissioning the connected device including:

a user-interactive control logic for assigning a physical device tag, a device address, and a device identification to the connected device; and

a user-interactive control logic for installing a control strategy to the digital device.

7. A method of configuring a control system comprising:

predetermining a configuration of devices coupled to a network;

sensing a connection to the network of a device that is not included in the predetermined configuration;

assigning the connected device a standby address which allows access to device information and configuration parameters of the connected device;

commissioning the connected device into an operational state in communication with the control system, including:

assigning to the connected device a physical device tag, a device address, and a device identification;

installing a control strategy to the connected device; and

placing the connected device in an operational state in communication with the network; and

configuring the connected device in combination with the predetermined configuration of devices.

8. An executable program code for performing the method according to claim **7**.

9. An article of manufacture comprising a storage storing an executable program code for performing the method according to claim **7**.

10. A method of configuring a control system comprising:

predetermining a configuration of devices coupled to a network;

sensing a connection to the network of a device that is not included in the predetermined configuration;

assigning the connected device a standby address which allows access to device information and configuration parameters of the connected device;

commissioning the connected device into an operational state in communication with the control system; and

configuring the connected device in combination with the predetermined configuration of devices, including:

interrogating the connected device to determine a device type;

determining a role of the connected device in the context of the predetermined configuration; and

assigning a physical device tag so that the determined role is set.

11. An executable program code for performing the method according to claim **10**.

12. An article of manufacture comprising a storage storing an executable program code for performing the method according to claim **10**.

13. A method of configuring a control system comprising:

predetermining a configuration of devices coupled to a network;

sensing a connection to the network of a device that is not included in the predetermined configuration;

assigning the connected device a standby address which allows access to device information and configuration parameters of the connected device;

commissioning the connected device into an operational state in communication with the control system; and

configuring the connected device in combination with the predetermined configuration of devices, including:

calibrating the connected device.

14. An executable program code for performing the method according to claim **13**.

15. An article of manufacture comprising a storage storing an executable program code for performing the method according to claim **13**.

16. An executable logic operating in a network for configuring a control system comprising:

means for predetermining a configuration of devices coupled to a network;

means for sensing a connection to the network of a device that is not included in the predetermined configuration;

means for assigning the connected device a standby address which allows access to device information and configuration parameters of the connected device;

means for commissioning the connected device into an operational state in communication with the control system, including:

means for assigning to the connected device a physical device tag, a device address, and a device identification;

means for installing a control strategy to the connected device; and

means for placing the connected device in an operational state in communication with the network; and

means for configuring the connected device in combination with the predetermined configuration of devices.

17. An article of manufacture comprising a storage storing an implementation of the executable logic according to claim **16**.

18. An executable logic operating in a network for configuring a control system comprising:

means for predetermining a configuration of devices coupled to a network;

means for sensing a connection to the network of a device that is not included in the predetermined configuration;

means for assigning the connected device a standby address which allows access to device information and configuration parameters of the connected device;

means for commissioning the connected device into an operational state in communication with the control system; and

means for configuring the connected device in combination with the predetermined configuration of devices including:

means for interrogating the connected device to determine a device type;

means for determining a role of the connected device in the context of the predetermined configuration; and

means for assigning a physical device tag so that the determined role is set.

19. An article of manufacture comprising a storage storing an implementation of the executable logic according to claim **18**.

20. An executable logic operating in a network for configuring a control system comprising:

means for predetermining a configuration of devices coupled to a network;

means for sensing a connection to the network of a device that is not included in the predetermined configuration;

means for assigning the connected device a standby address which allows access to device information and configuration parameters of the connected device;

means for commissioning the connected device into an operational state in communication with the control system; and

means for configuring the connected device in combination with the predetermined configuration of devices including:

means for calibrating the connected device.

21. An article of manufacture comprising a storage storing an implementation of the executable logic according to claim **20**.

22. A process control system comprising:

a process;

a plurality of devices coupled to the process;

a communication network coupled to the devices;

a workstation coupled to the plurality of devices via the network and including a user interface; and

a software system executable on the network and implementing a routine for automatically sensing a connection of a device to a network and placing the connected device in an accessible state for communicating with a user via the user interface,

wherein the devices are field devices selected from devices including pumps, valves, and motors.

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